THE PLANT DISEASE BULLETIN

Issued By

THE PLANT DISEASE SURVEY

1921

Volume V Number 7

October 1, 1921

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

THE PLANT DISEASE BULLETIN

Issued by

THE PLANT DISEASE SURVEY

Vol. 5. October 1, 1921. Number 7.

CONTENTS

Cereal and Forage Crops..... 109
Wheat..... 109
Sorghum..... 110
Red clover..... 110
Fruit Crops..... 111
Apple..... 111
Pear..... 112
Grape..... 113
Vegetable and Field Crops..... 113
Potato..... 113
Tomato..... 116
Onion..... 117
Watermelon..... 118
Asparagus..... 120
Tobacco..... 121

Epiphytotic of ergot of wheat in North Dakota as reported by H. L. Bolley. (Page 109).

Report of potato wart survey with map showing quarantine areas in Western Maryland given on page 113.

Notice to collaborators:
Final Plant Disease Survey report on cereal diseases to be called for by October 15.

CEREAL AND FORAGE CROPS

WHEAT

Ergot caused by Claviceps purpurea.

Further valuable data on the wheat ergot outbreak in North Dakota, reported in the last issue of this Bulletin has been supplied by H. L. Bolley:

"This disease has increased extensively under the conditions which have prevailed during the past two or three years. It has

become very destructive in rye and particularly in the durum wheats, even occurring to a marked extent in barley. There are large sections of the State, particularly north and eastward in which rust has not materially damaged the late wheat. The infection from ergot seems to be so matched by the development of the wheat that it was possible for this disease to infect practically every grain in the head, and in many cases more than 50% of the heads, so that crops which were otherwise very promising seemed to be destroyed by ergot in a week. Great quantities of honey-dew like substance exuded from the blossoms and young grain. This exudation was so great that it ran down the stems so as to collect large quantities of dust and dirt to which the flies were quite attracted."

SORGHUM

Head smut caused by Sphacelotheca reiliana.

This smut has been reported from several places in Kansas and Texas by Melchers and Taubenhaus. It appears not to be sericus, however. This smut is being found on corn in new localities in the state of Washington this year (See Pl. Dis. Bul. 5: 92. Sept. 15, 1921).

Covered kernel smut caused by Sphacelotheca sorghi.

This disease is reported as very common in Kansas fields where seed treatment is not practiced. Complete control obtains, however, where seed is treated. It is prevalent in Texas and a specimen has been received from Alabama.

RED CLOVER

Another statement regarding red clover diseases has been received from W. D. Valleau of Kentucky. Information on this subject is needed from a considerable number of other states, particularlly those where red clover is most important. The statement reads as follows:

"The clover disease situation is, I believe, not serious in this state, although all of the commonly reported diseases are present. I am of the opinion that the diseases do not play an important part in the clover crop failure, although they do cause a considerable amount of damage in many cases.

"I am unable to give estimates of the losses in individual fields, or over the state, due to any diseases except Sclerotinia trifoliorum which caused losses the past year of not over 5% of red clover in several fields examined. So far we have had no cases of undetermined root rots called to our attention with the exception of a slight amount of seedling blight when the seedlings were grown in sand.

"Sclerotinia trifoliorum appears not to be serious in this state as a red clover disease, although it caused a great amount of injury to crimson clover, alfalfa, and the past year, to sweet clover."

After giving experimental data obtained from Professor Roberts, Department of Agronomy, Kentucky Agricultural Experiment Station, showing the great benefit derived from the application of acid phosphate and limestone, Valleau concludes:

> "It is evident from this statement, that the production of clover in this state is nearly entirely dependant upon the proper handling of the soil, and it would not be surprising if a similar situation were found throughout a considerable portion of the middle eastern states."

FRUIT CROPS

APPLE

The condition of apples in the United States is reported September 1 as 35.5%, while the 10-year average is 58.4%. The total production is estimated (Mo. Crop Reporter, Sept. 1921) as 109,166,000 bushels as compared with 244,022,000 bushels of last year and the commercial production estimate is placed at 19,509,000 barrels as compared with 37,239,000 barrels of 1920. Washington, Oregon, and other far western states have good crops, while in the East, New England seems to have a fair yield and New York about two-thirds of the average production, but less than half that of last year.

On account of the small crop many orchards have been more or less neglected this year so that diseases have had an opportunity to develop. The peculiarlly dry hot season has apparently retarded scab but others such as blotch and fire blight apparently have not been greatly checked. The following additional reports of apple diseases have been received since the last Bulletin:

Blotch caused by Phyllosticta solitaria.

Pennsylvania: First report June 11 from Adams County. Prevalence about as last year. Principal damage in small home orchards, usually not sprayed. Severe infection has been reported from Adams, Somerset, Crawford, Mercer, and Philadelphia Counties. (Thurston, September 1).

Alabama: Occurs in northern part of state. Amount of damage not available. (Povah, September 1).

Texas: Fairly prevalent, 5% loss. (Tauberhaus, September 1).

Scab caused by Venturia inaequalis.

Scab is troublesome in New England on fruit of susceptible varieties. (McIntosh). In Vermont the fruit damage is said not to be heavy, although foliage infection was heavy earlier in the season. In Minnesota infection of the fruit is reported very light.

Fire blight caused by Bacillus amylovorus reported as very common locally in Vermont, especially on sweet varieties, and as light to moderate in Minnesota where it is less injurious than last year.

PEAR

On September 1 the condition of the pear crop was reported as 45.3% of normal, while the 10-year average for September 1 is 65.8%. (Monthly Crop Reporter, September 1921). A production of 9,475,000 bushels as compared with the 17,279,000 bushels of last year is estimated. As usual, the leading pear states are California, Washington, and New York. Reports on diseases follow:

Scab caused by Venturia pyrina.

Maine: One specimen of pear scab, the only case of a pear disease, reported so far this season. (Morse, September 15).

Connecticut: At least as bad as average years. (Clinton, September 15).

Pennsylvania: Reported only from Philadelphia and Bucks Counties. Damage slight. (Thurston, September 15).

Florida: Specimens of pear scab were brought in from Alachua County. The markings were slight. (Burger, August 1).

Ohio: More specimens of pear scab have been received this season than during any three previous seasons. (Thomas, September 15).

Wisconsin: Causing some damage in southeastern Wisconsin. However, pear growing is of very minor importance in Wisconsin. (Vaughan, September 15).

Fire blight caused by Bacillus amylovorus.

Connecticut: Few complaints, but apparently at least the usual amount. (Clinton, September 15).

New Jersey: Common occurrence, but not severe. (Cook, September 15).

Delaware: Generally prevalent, but injury slight compared with early frost effect on new growth. (Adams, August 1).

West Virginia: Not particularly destructive this season although an occasional tree shows considerable blight. (Giddings, September 15).

Tennessee: (East) Fire blight common everywhere and usually very destructive. (Sherbakoff, August 11).

Georgia: Pears promise an average crop, although some blight damage is noted. (Bureau of Markets and Crop Estimates, Crop Notes, week ending Sept. 10).

Florida: The pear orchards are in a very bad condition in Florida due to this disease. In many sections the growing of pears has been abandoned. (Burger, August 1).

Ohio: The chief source of loss to pear plantings occasioned by fire blight is recognized to be in scattered home plantings throughout the state. Where pears are grown on a commercial scale little evidence of the disease has been noted. How much of this is due to protective sprays and how much to pruning, it would be difficult to say. Possibly both have contributed. While little difficulty is experienced in obtaining specimens from nearly all sections of the state, the loss occasioned by fire blight was thought to be less this season than normal. (Thomas, September 15).

Wisconsin: More than usual, follows with the increase of this disease on apple. (Vaughan, September 15).

Kansas: Less common than usual. (Melchers, September 15).

Colorado: This disease has not been reported for this state so far this season. (Learn, September 15.)

Leaf spot caused by Septoria piricola.

Delaware: Very prevalent and serious infection because of neglected spraying of trees. (Adams, August 1).
Florida: This disease was reported from West Florida. The report stated, however, that the disease was not severe. (Burger, August 1).

Leaf blight caused by Fabraea maculata was reported by Adams of Delaware as follows on August 1: "Because of early frosts spraying of pears was neglected, which has favored severe infection. Trees the last of July were 60% defoliated."

GRAPE

Black rot caused by Guignardia bidwellii.

New Jersey: Less severe than usual. (Cook, September 15).
Ohio: Losses due to black rot are not thought to be greater than normal. It is interesting to note that in the grape growing sections, particularly in northern Ohio this is a comparitively rare disease, whereas throughout the other sections of the state where grapes are not grown commercially, but only for home use attacks of the fungus are very severe. (Thomas, September 15).
Indiana: Apparently, much worse than usual this year. (Gardner, July 1).

Downy mildew caused by Plasmopara viticola.

New Jersey: Much less than usual. (Cook, September 15).
Ohio: Considerable loss has been occasioned by the Downy mildew this year. Attacks have been especially severe on young vines and seem to be confined to the early and mid-season. Less evidence of the disease is to be found at the present time. (Thomas, September 15).

VEGETABLES AND FIELD CROPS

POTATO

Wart caused by Chrysophlyctis endobiotica.

Three new localities have been added to the list of wart infested areas in the United States as a result of the potato wart survey during 1921. These are located in Allegany County, Maryland, and are as follows: Midland, Charlestown, and Detmold. The last two named villages adjoin the town of Lonaconing on the southeast and southwest respectively. One infested garden was found at Midland, one heavily infested garden of about one-fourth acre at Charlestown, and three badly infested gardens at Detmold. In the villages where wart was

discovered in 1920 new gardens were found to be infested and those located in 1920, when reexamined this year, were severely infested. The State of Maryland has placed a quarantine on the infested areas and a program is being conducted to obtain the cooperation of all potato growers in Allegany and Garret Counties to assist in preventing the spread of the disease.

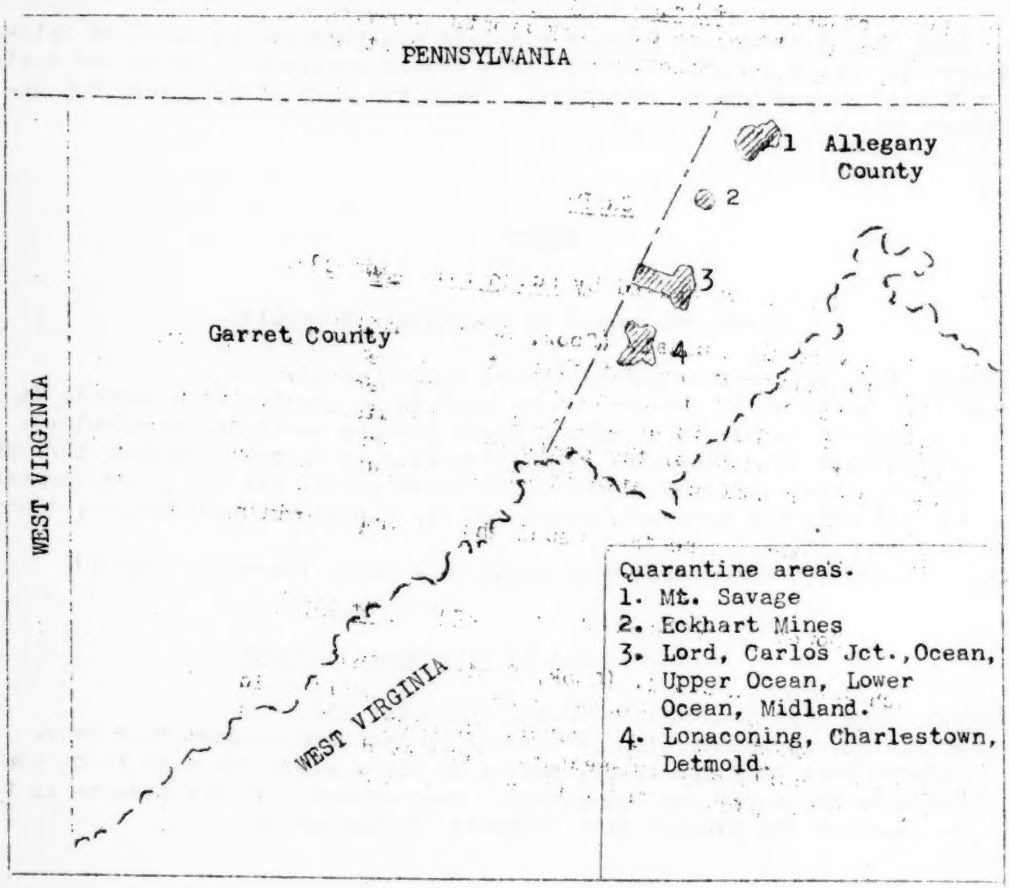

Fig. 2. Garret County, and a portion of Allegany County, Maryland showing general location and relative size of the four potato wart quarantine areas of western Maryland.

Two new findings were made in Pennsylvania, one in the Hazelton quarantine area and the other in the Llanfair-Beaverdale locality. These findings do not extend the wart zone as do those which were located in Maryland during the past summer. Although the Maryland infestations are in the same coal zone which extends from Pennsylvania into West Virginia, yet the Lonaconing area brings the known infestation in Maryland several miles farther south and nearer the Thomas area of West Virginia.

Late blight caused by *Phytophthora infestans*.

Since the last Bulletin, late blight has been reported from other parts of New England, but as will be seen from the reports it has appeared so late that

there is little liklihood of any particular damage.

Maine: (Aroostook County) Late blight is really here but so slight that it would be overlooked by almost anyone but a trained observer. It is present just the same in quite a number of fields. It will not be a factor in the yield but may result in an occasional rotten tuber, particularly if digging has to be done under wet conditions. In that case we may get more rot than I think. However, a frost that may come at any time now would largely, if not entirely, eliminate the danger of rot. (Morse, September 13).

New Hampshire: Late blight has been very scarce in the state this year and we will have very little tuber rot. We have had a very dry summer and I have seen the disease only once in a non-sprayed field and while it was well distributed over the field, the damage done at the time of my visit September 14 was negligible. (Butler, September 19).

Massachusetts: We have kept close watch for late blight this summer, but have found no signs of it until September 11. On that date the disease was found in a local garden, but the infection was not heavy. The weather was so dry throughout August that there was little opportunity for the blight fungus to develop and since the potato crop has matured very early this year and consequently most of the vines are now practically dead through early maturity, there is not likely to be much damage from late blight even if weather conditions favorable to it should develop. (Osmun, September 14).

New York: Since September 1 the disease has shown up in nearly every county of the state. In most cases, however, the blight is not at all severe but Professor Hoerner reports that Saratoga County fields were pretty badly hit. Nearly all fields are dead now all over the state, but most of this was due to such severe insect injury that the vines became brown prematurely. For this reason any fields in which blight has not yet shown will hardly be attacked this year. We have never had such early dying of the plants, but as I said above this dying is due only in a very few cases to blight. So far as tuber rot is concerned and reduction in yield, I think the losses are only but a trace. (Chupp, September 13).

Michigan: We had specimens of the early phase of attack from Alpena County, collected by H. C. Moore on September 4. (Coons, September 15).

Early blight caused by Macrosporium solani.

Maine: (Aroostook County) There is more early blight than I have seen elsewhere, but it is not going to damage the crop. (Morse, September 13).

New Hampshire: Except in rare instances, no material damage done. (Butler, September 1).

Minnesota: Fairly common on Green Mountains in Beltrami County, August 1. Very little found in Red River Valley on Early Ohios. (Stakman, September 15).

Nebraska: Very slight amount of infection. (Goss, September 1).

North Dakota: Early blight was not noticeable to any marked extent in any potatoes in the Red River Valley as in the case of other fungi. The drouth and hot weather seem to have been sufficient to essentially eliminate this disease. (Bolley, August 1).

Kansas: About 5% damage to the crop. (Melchers, September 1).

Fusarium wilt caused by Fusarium oxysporum.

Minnesota: Reported more severe than usual. Spots found in various fields of Green Mountain, Irish Cobbler, and Early Ohios, in northern part of the state. These varied from 10 to 30 feet in diameter and plants were severely infected. (Department of Plant Pathology, Stakman, September 15).
Nebraska: Five to ten per cent infection. (Goss, September 1).

Tip burn and hopper burn caused by weather conditions and leaf hoppers.

New Hampshire: Quite prevalent throughout the state. (Butler, September 1).
Minnesota: Hopper burn on potatoes was more severe this year than has been noted before. Seems to be associated with the curling and dwarfing of the leaves. (Stakman, September 15).
Kansas: Quite severe the latter part of June and early July. (Melchers, September 1).

TOMATO

Leaf spot caused by Septoria lycopersici.

According to F. J. Pritchard and W. S. Porter (Journ. Agr. Res. 21: 501-506. July 1), the horse nettle (Solanum carolinense L.), a widely distributed weed, is a very susceptible host of Septoria lycopersici. In Maryland, New Jersey, and Delaware, where the disease causes heavy annual losses, the weed is especially common, often occurring in tomato fields, sometimes in greater numbers than the tomato plants themselves. In view of the fact that horse nettle has been found to be a host of the tomato Septoria, collaborators are asked to watch S. carolinense for leaf spot and to report the observations and send specimens to this office.

Connecticut: No more than in average seasons. (Clinton, September 15).
New Jersey: Very abundant and destructive. Appeared about the 10th of July. (Cook, September 15.)
West Virginia: Quite serious in occasional gardens. Reported most from central and southern part of state. Very well controlled by Bordeaux spray. (Giddings, September 15).
Tennessee: Leaf blight (Septoria) is pretty common in East and West Tennessee, in places causing considerable damage. (Sherbakoff, August 11).
Ohio: This leaf spot of tomato has been of minor importance this season. Only a few specimens have been collected. (Thomas, September 15).
Wisconsin: Less than usual. (Vaughan, September 15).
Minnesota: Moderate infection reported August 1 from Ramsey County. (Stakman, September 15).
Kansas: Very common in most fields. About 10% loss. (Melchers, September 15).
Colorado: I have noticed this disease in several gardens about Fort Collins. (Learn, September 15).

Fusarium wilt caused by Fusarium lycopersici.

New Jersey: Infected areas gradually increasing. (Cook, September 15).

West Virginia: Quite general throughout the state but we do not have very much data as to actual loss. (Giddings, September 15).
Tennessee: (East) Common and, in many cases, causing serious losses. (Sherbakoff, August 11).
Florida: Several specimens were sent in from various localities. No complaint, giving indications of severe losses , was received. (Burger, July 15).
Ohio: Fusarium wilt of tomato is becoming gradually more prevalent throughout the state. Its progress is most rapid in centers where the tomato is commercially cropped. The past season has been marked by very extensive losses both in crops grown under glass and in the open field. In many sections it is scarcely worth while to attempt to grow tomatoes other than resistant varieties. (Thomas, September 15).
Kansas: Common in counties in southeastern Kansas. This disease is becoming more common and serious each year. (Melchers, September 15).

Early blight caused by Macrosporium solani.

Pennsylvania: Has caused considerable damage in the southern part of the state, locally. A loss of 50% in one field in Bradford County, was recently reported. (Thurston, August 15).
West Virginia: Quite common in the Ohio Valley and occasionally injurious in other sections of the state. (Giddings, September 15).
Ohio: In marked contrast to last season, comparatively little of this disease has been observed this year. While there is little difficulty in finding traces of it in nearly all sections of the state it has occasioned no loss. (Thomas, September 15).
Wisconsin: Of minor importance, not doing any damage. (Vaughan, September 15).

Mosaic (cause undetermined).

Connecticut: Apparently more prevalent than usual. (Clinton, September 15).
New Jersey: Less severe than usual, but severe in some fields. (Cook, September 15).
Kansas: Very common in most fields, causing loss in production. (Melchers, September 15).

Cracking due to dry weather.

Ohio: A very large part of the tomato crop throughout the early and mid-season was lost due to cracking which occurred in the epidermis both radial and circular, thought to be due to dry weather. These resulted in a very large number of leakers which very seriously interfered with the handling and shipping of the crop. (Thomas, September 15).

ONION

Smut caused by Urocystis cepulae.

In New York, according to reports in the Weekly News Letter of the Departments of Entomology and Plant Pathology of the State College of Agriculture,

smut was very common in Orange and Wayne Counties during May and June, although the formaldehyde treatment gave good control. In Orange County (June 13), check rows showed as high as 52% smut, while treated rows had only about 5%. In Wayne County (May 31) the disease was so common that a number of farmers plowed up their fields, and it appeared in new sections where onions had been grown only once or twice. Later reports, however, state that drought and thrip injury were the most important factors in reducing the crop.

Ohio: Excellent control in all cases where formaldehyde drip treatment is used. (Thomas, September 15).

Wisconsin: More than for several years. Rains before seed germinated evidently washed out the formaldehyde so that seed treatment was less effective than usual. (Vaughan, September 15).

Oregon: I spent July 19 with Professor Barss in the onion growing section of Washington County, Oregon. The two important problems there are the smut and mildew. Professor Barss has a small but very convincing demonstration of formaldehyde drip control for smut in one field. He has tried out several formulae and the results coincide with those we have secured in eastern sections. (Walker, J. C. News Notes, Office of Cotton & Truck, August 6, 1921, page 4.)

Downy mildew caused by Peronospora schleideni.

Ohio: Disease thought to be about what is found during normal years. In the early part of the season no reports came to our notice due to dry weather. Slight attacks developed later in early August. (Thomas, September 15).

Oregon: (Washington County) Mildew varies widely in its importance from season to season. In 1916 the crop was nearly ruined, but since that time it has been of little importance. We found a little of it in several fields and in one seed planting, but if dry weather prevails it will not be serious. Ordinarily the weather is very dry here from June 15 to September 1, hence it is only in those unusual seasons when rains do occur during this period that mildew is a factor. (Walker, J. C. News Notes, Office of Cotton & Truck, August 6, 1921, page 4.)

Pink root caused by Fusarium mallii.

Oregon: (Washington County) We found some small spots of pink root in a few fields. I doubt if it is the severe type found in Texas. It appears to be correlated with poor soil conditions which are responsible for unthrifty plants. (Walker, J. C. News Notes, Office of Cotton and Truck, August 6, 1921, page 4.

California: About 1,000 acres in Delta region (Islands) abandoned. Soil severely infested. In Coachella Valley, Riverside County, .5% infected roots. (Milbrath, July 15).

WATERMELON

Anthracnose caused by Colletotrichum lagenarium.

New Jersey: Prevalent. (Cook, August 15).

Virginia: Reported from Madison (July 10) and Mecklenberg (July 20) Counties. (Fromme, August 15).

West Virginia: Very prevalent and destructive in the Ohio Valley. (Giddings, September 15).

Tennessee: (Vicinity of Chattanooga) Two fields examined, anthracnose the only disease found. In one field the damage was negligible although the disease was present on most of the plants. In the other field more than 90% of the plants were practically destroyed by the disease. (Sherbakoff, August 11).

North Carolina: Definite reports not available but known to be destructive when spraying is not practiced. (Foster, August 15).

Florida: (May 5) Throughout the southeast dry weather has prevented anthracnose being a factor to date. Occasional infected vines are to be found in fields about Lakeland.

(June 1) Several days of heavy rain during the week of May 17 served to check the aphids but also to start the spread of anthracnose. Many fields were completely ruined by the epidemic, and the melons are now baking in the sun. Growers farther north have sprayed thoroughly, and reports have been received to the effect that anthracnose has been controlled. (Meier, F. C. News Notes of the Office of Cotton, Truck, and Forage Crop Disease Investigations 10[5]: 5, June 4.)

Mississippi: Reported from Clay and Lauderdale Counties. Reported last season from only Clay County. One grower reports severe damage in a field of five acres near Meridian. (Neal, August 15).

Louisiana: Scattering infection but causing only slight loss. Spots develop very slowly in this climate. (Edgerton, August 15).

Texas: Fairly common this year due to rains. Four per cent loss in the fields. (Taubenhaus, August 15).

Ohio: The most conspicuous disease of watermelon for the current season has been anthracnose. From 2-10% of the local production in the state shows infection. (Thomas, September 15).

Kansas: Very common on melons and foliage. Destruction of foliage early in September was responsible for melons being sunburned. Loss about 40%. (Melchers, September 15).

Stem end rot caused by Diplodia sp.

Experiments reported by F. C. Meier (Bu. Mark. & Crop Est. Field & Veg. Div. Letter, June 23) indicate that only Diplodia is capable of producing stem end rot. Inoculations were made on freshly cut surfaces with spores and mycelia of several fungi, including Diplodia sp., Phoma sp., Mycosphaerella citrullina, Fusarium sp., Alternaria sp., and Rhizopus nigricans, all of which had been found associated with watermelon decay in the field.

Delaware: First observed August 2. Very prevalent in early planted fields and more common on new ground. Some fields will run 5% infection. (Adams, August 15).

North Carolina: Not common under field conditions. (Foster, August 15).

Florida: Some Diplodia showed in the fields. Returns from the receiving market show loss in transit from this fungus. Where the stem end was treated there was very little rot. (Burger, August 15).

Mississippi: Does not appear as serious as last season, probably because of the dry weather which has prevailed. The melon centers of the southern part of the state have suffered from extreme dry weather. (Neal, August 15).

Louisiana: Very slight. Saw only a very few melons affected. (Edgerton, August 15.)
Texas: Traces in the field. Non-important, more of a transit trouble. (Taubenhaus, August 15).
Kansas: Occurs to some extent in most fields. (Melchers, September 15).

ASPARAGUS

Rust caused by Puccinia asparagi.

In reply to the question: "To what extent is asparagus rust prevalent in your state in 1921 as compared with (a) 1918 to 1920, and (b) the years immediately subsequent to the introduction of rust into the state", the following replies from collaborators have been received to date.

Massachusetts: (a) The rust situation in Massachusetts is practically the same this year as from 1918-1920, that is, it is generally distributed but of no particular consequence.
(b) The first authentic report of rust in Massachusetts was in 1896. In 1897 there was a serious outbreak of the disease in the eastern part of the state and in 1898 as a result there was a very serious falling off in the crop. This continued for some years, but the development of resistant strains and their quite general adoption by growers has reduced the rust problem to relatively little importance. Asparagus has never suffered to any great extent in western Massachusetts. (Osmun, Anderson, & Krout, September 20).
Connecticut: (a) Asparagus rust has not been very abundant here in any of the years from 1918 to 1921, so it is hard to determine whether it is more or less prevalent this year than in the three preceding years.
(b) It certainly is very much less prevalent in recent years than in those following its introduction into the state. (Clinton, September 21).
Pennsylvania: Asparagus rust is no more prevalent in 1921 than in previous years. (Orton, September 23).
Georgia: I have not seen any serious cases of rust in this state since 1918. (McClintock, September 19).
Louisiana: Have not seen the rust in Louisiana. (Edgerton, September 22).
Michigan: (a) More abundant this season than for many seasons past.
(b) Have no data to compare with the first invasion. (Bessey, September 19).
Wisconsin: Asparagus rust is less prevalent in 1921 than in 1918, 1919, or 1920. In fact, I have seen it this year only once or twice and then in only mild form. (Vaughan, September 19).
North Dakota: (a) Rust less destructive in 1921 than in the years mentioned.
(b) Difficult to answer as to what destruction is wrought by the rust. Rust was abundant in the state in 1890, when I first came here, it being prevalent on small garden plantings. Even at the present time there are certain plantings which appear to almost entirely escape it and certain others which are very severely injured. I would think it a safe guess that the vitality of the roots for the next year on a crop which is attacked this year is very considerably reduced. A rough guess

of 10% in production would certainly be not too heavy if the rust was even on the foliage of the plot. (Bolley, September 20.)

Kansas: About the same this year as in 1918 to 1920. Am unable to compare with the years immediately subsequent to the introduction of rust into the state. (Melchers, September 28).

TOBACCO

Dr. W. D. Valleau has called attention to an error made in quoting his report on tobacco leaf wilt in the last number of the Bulletin (page 107). Instead of "growing plant" in the second line it should read "growing point".

Library,
U. S. Department of Agriculture,
Washington, D. C.